

~~Sub 1~~  
Claim 1 (amended). A method of synchronizing mobile CDMA radio receivers in a cellular CDMA mobile radio system, wherein a first synchronization channel with a first frequency is provided for transmitting a synchronization signal with a code that is known to the mobile radio receivers and to base stations of the mobile radio system, and wherein a transmission from a base station to a mobile radio receiver delays the synchronization signal by an unknown time period and the first frequency is shifted by the transmission to a second frequency, the method which comprises the following steps:

~~3/12~~  
splitting the received synchronization signal into a real part signal and an imaginary part signal;

sampling the real part signal and the imaginary part signal to form sampled signals;

digitally filtering each sampled signal to correlate the sampled signal to the known code and to form filtered signals;

squaring each filtered signal to form squared signals;

determining a maximum signal level from the squared signals;

estimating the unknown time period with the maximum signal level determined in the determining step;

fine-tuning the second frequency to the first frequency.

said input signal processing units generating sampled values;

a plurality of delay circuits connected in series with said input signal processing units for receiving an input signal and outputting an output signal, said delay circuits receiving the sampled values and correlating the real part signal and the imaginary part signal with the known code;

multipliers connected to receive the input signal and the output signal of each delay circuit and multiplying a supplied signal with a coefficient;

a first adder connected to receive an output signal from each said multiplier, said first adder outputting a summed signal;

squaring elements each having an input connected to receive the summed signal from a respective said first adder and outputting a squared signal; and

a second adder connected to receive the squared signals from said squaring elements.